



American Radio Association

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EDWIN A. STEINBERG
General Counsel

June 21, 1996

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BY FEDERAL EXPRESS

Office of the Secretary
Federal Communications Commission
1919 "M" Street, N.W.
Washington, DC 20554

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FCC - L ROOM

RE: **Comments of the American Radio Association**
CI Docket No. 95-55

Dear Sir:

I am enclosing herewith original and nine copies of comments submitted in connection with above docket.

Very truly yours,

Edwin A. Steinberg

EAS/oc
encs.

No. of Copies rec'd 029
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**BEFORE THE FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

-----X
In the Matter
-of-

**Amendment of the Commission's Rules
Concerning the Inspection of Radio
Installations on Large Cargo and Small
Passenger Ships**
-----X

CI Docket No. 95-35

RECEIVED
JUN 21 1996
FCC TEL HOC

To: The Commission

COMMENTS OF THE AMERICAN RADIO ASSOCIATION

The American Radio Association ("ARA") is a labor organization representing Radio Officers, Radio Electronics Officers, Master Radio Electronics Officers and Communications and Electronics Officers (herein "Radio Electronics Officers" or "REO"). REOs represented by ARA are licensed by the Federal Communications Commission ("FCC") and the U.S. Coast Guard and are serving aboard U.S. flag container, dry cargo and tanker vessels. The primary responsibility of the REO aboard these vessels is to operate, maintain and repair all types of shipboard communications and electronics equipment.

ARA's comments will address the impact of the NPRM on GMDSS inspections.

As we enter into a new era of emergency and distress communication in the maritime services the Commission's proposals raised questions about some of the most troubling issues the Administration must face before full implementation on February 1, 1999. While the technological advancements will undoubtedly prove to be all that was expected, the international community wisely phased in the GMDSS over a number of years. With a little over two years before final implementation, the system is fraught with many problems such as: (a) false alerts,

(b) poor equipment design and lack of standardization, (c) changes in performance standards of GMDSS components, (d) lack of adequate operator training and testing and (e) lack of adequate maintenance capability.

The training issue is the most problematic since the indisputable evidence is that human error is the primary cause of false alerts, which have been determined to be as high as 95% in some areas.¹ As reported in the Wall Street Journal the airline industry installed Ground Proximity Warning Systems to promote safety. These systems gave out numerous false alarms and were crying wolf too often. As a result many pilots either ignored the alarms or shut the system off causing a series of accidents. This article is attached as *Exhibit "A"*. The false alarm rate at sea indicates the same scenario exists. The Commission must guard against creating an unsafe environment by letting the fox guard the henhouse.

The safety of seafarers, the protection of property and the environment, in light of the many problems which beset the GMDSS, dictate a more cautious approach in removing governmental oversight of this critical function.

One of the benefits which the NPRM identifies as resulting from privatization of the inspection process is that it will "increase the number of experienced entities available to inspect the radio stations of ships".² It is more likely that privatization will be a vehicle for abuse of the inspection process since, as proposed, individuals who have never operated or maintained the equipment can

¹ The Norwegian SAR reports that between 1991 and 1994 71% of all GMDSS calls to RCCs were false alarms - of those over 95% of all calls from Cospas and Sarsat were false - 96.6% from Imarsat C were false and over the last years a staggering 100% of all calls by DSC were false.

² This conclusion is correct only to the extent that the number of available "individuals" will be increased. They cannot be "experienced" since no annual GMDSS inspections have ever been conducted.

presumably issue the Safety Certificate. Notwithstanding whether a shifting of responsibility will decrease the Commission's administrative burdens, the primary concern which must be addressed is whether privatization will adversely affect safety. With this in mind the ARA offers the following comments:

1. **Qualifications of GMDSS Inspectors**

The crux of the Commission's proposal to utilize private sector inspectors is that GMDSS equipped ships must be inspected by a FCC-licensed technician who holds a GMDSS radio maintainer license. As justification for this proposal the Commission tentatively concludes that "FCC-licensed technicians have demonstrated knowledge of the operational and technical requirements for radio telephone installations, radio telegraph installations, and/or GMDSS installations." The answer to the question of whether the Commission's minimum licensing requirements ensure that individual ship inspectors can be considered qualified is an emphatic **NO**. While some FCC-licensed technicians have the competency to conduct shipboard inspections their expertise has been developed through on-the-job training and other experience. However, the FCC license in and of itself cannot be used as a measure of competence. There is no current requirement that a licensee's knowledge is tested and assessed by practical demonstration in order to obtain an FCC radio maintainer license. In fact, except for passing a written examination, the only experience requirement for any FCC license in the maritime services is the six-month service endorsement for the holder of a radio telegraph license to sail as the sole radio officer aboard vessels that are subject to SOLAS. It should be noted that the IMO Sub-Committee on Radio Communications and Search and Rescue, 1st Session, included the following language in their final report:

"The STCW was revised in 1995 to increase the minimum standards of competence for the GMDSS GOC and it is extremely important that Administrations implement at least these standards as soon as possible in their examinations for the GOC."³

Therefore, it should be concluded that the holder of a FCC license has not been trained and may not have the experience to conduct a thorough and accurate radio inspection since that person may never have seen a shipboard radio installation. This is equally true for the holder of a FCC GMDSS Radio Maintainer License who would inspect a complex GMDSS installation.

ARA believes that it is imprudent to consider a person competent to inspect a shipboard GMDSS installation until they have attained the level of experience and training at least equal to that specified in the IMO model training course for the GMDSS Maintainer License for those ships carrying passengers or GMDSS equipped large cargo vessels. There should also be a requirement of six months relevant experience in the installation, maintenance and operation of shipboard radio installations. Every shipowner, ship master, FCC inspector and maritime electronics expert is aware that the existing licensing structure does not require practical demonstration of ability to repair or maintain communications equipment. On most U.S. flag ships the only member of the crew who has this expertise is the FCC licensed ship's Radio Officer. The Radio Officer/REO is the only crew member involved in the day-to-day maintenance and repair of communications equipment. In fact the REO's competency is not determined by the fact that he or she holds a First or Second Class Radio Telegraph Certificate but rather from experience and training. Passing the examination

³ Table A-IV/2 of the STCW Amendments specifies the minimum standards of competence for GMDSS radio operators and requires "assessment and practical demonstration of operational procedures...".

does not reflect competence. It is interesting to note that the only part of the radio telegraph examination that requires a practical demonstration of competence is Morse telegraphy. The REO's expertise in maintenance and repair has developed over the years through shipboard experience and continuous skill upgrading at industry-supported training programs such as the ARA Technology Institute for Maritime Electronics which has been training shipboard electronics personnel since 1958.

At a minimum any proposed regulation to privatize the inspection process must address the licensing of inspectors. ARA believes it is imperative that inspections should only be conducted by individuals who have completed a Coast Guard approved course and have proven their knowledge and experience in the maintenance and repair of electronic communications equipment.⁴

2. GMDSS Inspections

Use of the self-test features of the GMDSS equipment should only be a part of the inspection process. It is not unexpected that AIMS would advocate reliance on self-test features as the sole element of the inspection process. To ensure safety and to meet international requirements a thorough technical inspection must be conducted. A successful self-test only insures that the self-test itself works - this should not be a substitute for independent confirmation that the equipment is operating in compliance with its required performance standards.⁵ The self-test procedures do not take into account conditions that exist outside of the self-test criteria such as receiver sensitivity or

⁴ The Coast Guard has authority for ensuring overall vessel safety and compliance with requirements of the Communications Act, International Regulations & Treaties. If the FCC abdicates its responsibility for conducting GMDSS inspections the Coast Guard could not rely on an inspection to make its determination that the GMDSS is installed and operating properly.

⁵ SOLAS Regulation 13 (Sources of Energy) - Regulation 14 (Performance Standards) and Regulation 15 (Maintenance Requirements) must be fully complied with before a Safety Certificate can be issued. Therefore, inspection procedures must be fully identified and itemized in the proposed regulations and agreed to by the Coast Guard to insure compliance with all applicable requirements.

frequency tolerance. The criteria for self-testing is determined by the manufacturer and are not designed to test the operational capability of the GMDSS components. Since the design and specifications do not meet uniform standards self-testing is therefore totally unreliable.

The proposal to rely on self-test features of GMDSS equipment as part of future inspections diminishes the process and does not meet the specified requirements of RR 1842-1845, RRN 38-11, nor would this type of inspection be sufficient to ensure compliance with SOLAS Regulations 12-15. It is not consistent with the SOLAS amendments to reduce the competence required of an inspector and simultaneously make the inspection procedures brief and easy to perform. Another consideration regarding the inspection procedures is reliance on the type acceptance process for GMDSS equipment. The application for type acceptance requires an attestation that the equipment complies with the performance standards of §80.1101. There is no other independent verification that the equipment meets applicable standards other than a physical inspection. Without a detailed inspection to insure that the equipment complies with functional requirements a determination that the installation is in good working condition cannot be made as required by §206 of the 1996 Act.

There are other difficulties which must be overcome before the GMDSS can be relied upon to provide protection to seafarers around the world. One serious problem was addressed by the National Oceanic and Atmospheric Administration in their letter to the Commission dated March 29, 1996 attached as *Exhibit "B"*. NOAA expressed concern about the intolerable proliferation of interference within the 406-406.1 MHz band.

ARA is aware of only one GMDSS exemption certificate issued pursuant to §206 of the 1996 TELECOM Act. The manner in which this exemption was issued underscores the fact that increased surveillance is required. The vessel in question was inspected on February 1, 1996 and the Safety

Certificate was issued although the vessel had neither at-sea maintenance capability or arrangements for shore-based maintenance (*See Exhibit "C"*). The confusion engendered by the dual roles played by the FCC and the Coast Guard no doubt contributed to this gross error. While the Commission clearly evinces no interest in investing its resources to insure that GMDSS requirements are meticulously adhered to, the Coast Guard which must make a final determination that the GMDSS installation is in good operating order, has not yet developed the expertise to properly oversee the inspection process. Without clear guidelines from either Agency, if privatized the inspection process will be virtually unregulated.

47 CFR 80.1067 requires that a Safety Certificate can only be issued if a ship is in compliance with the requirements of the Safety Convention.⁶ The proposed Regulations do not address procedures by which a privatized inspection process will insure that the ship is in conformance with SOLAS Regulations 11-17. There must be assurance that the required equipment is in place and type accepted (Regulation 11), that the required watches have been observed (Regulation 12) and records are maintained (Regulation 17).

If the initial inspection of the GMDSS installation and subsequent annual inspections are faulty, then ongoing operations and maintenance will not be up to standard. If the annual inspection is not done properly, then equipment difficulties or malfunctions might not be corrected or discovered. Seafarers would then be at potential risk if radio installations fail during an emergency

⁶ The Commission proposes to revise this section so that the Safety Certificate can be issued by the FCC-licensed technician "if the ship passes inspection." It is not clear whether requirements of the SOLAS Convention, 1974 and its Protocol of 1978 must still be met.

because an improper or inadequate inspection failed to disclose a problem, creating a disaster waiting to happen. The concerns about the safety implications of this NPRM are expressed by a seagoing REO in his letter attached as *Exhibit "D"*.

3. **FCC Licensing Examinations**

The Commission's prior excursion into the area of privatization by using Commercial Operator License Examination Managers ("COLEMs") to administer tests provides valuable insights. The current test pool of approximately 450 true/false questions for element 7 can be passed after a minimal period of study and does not require any background in electronics. The most important asset is a good memory. One COLEM advertises "we will help you pass the exam with our exceptional instructional techniques (95% pass rate). As importantly you will learn much beyond the exam requirement." (*See Exhibit "E"*)⁷. Not only is the method of conducting the examination faulty but the question pool itself is suspect as numerous incorrect answers in the first question pool used by the Commission were considered correct, *i.e.* the applicant was given credit for the wrong answer. Although ARA alerted the Commission to this fact nothing was done to correct the situation. It would seem that under any reasonable standard all licenses issued utilizing a faulty question pool should be considered tainted and reexamination would be appropriate.

4. Radio Regulation 4013 stipulates that inspectors shall have in their possession an identity card or badge, issued by the competent authority. Regulations for privatization of radio inspections should therefore require that an FCC-licensed inspector must have a verifiable identity card issued by the Commission.

⁷ The use of the COLEM has led to some curious practices. In one instance the COLEM administered the GMDSS Radio Operator examination to the entire deck officer complement on one vessel. Not surprisingly all applicants passed.

5. The Commission proposes that licensed technicians may conduct an inspection and issue the Safety Certificate. ARA believes that this is contrary to the authority granted by SOLAS Regulation 6 that allows the Administration to entrust the inspection to "surveyors" or "organizations". The Commission's proposal to allow individuals to conduct inspections does not meet the provisions of the SOLAS regulation. An FCC-licensed technician acting individually has no oversight responsibility, is not answerable to a qualified professional organization and, as we have shown, meets no acceptable standards of competency.

6. The Commission proposes that the inspector will issue one certificate and that additionally the vessel owner, operator or ship's master must certify that the inspection was performed correctly. This arrangement is another recipe for disaster - how can a shipowner or master certify that the inspection was done completely and properly when they were not necessarily even present during the inspection. Also, for the shipowner or master to make this certification they should be at least as knowledgeable as the inspector. Shipowners and masters should carefully consider the liability issues associated with making such certifications. This secondary certification clearly serves no purpose and does not enhance the safety of the ship and crew which is the primary goal of the inspection process.

7. The procedure for qualifying an organization to conduct inspections must be clearly spelled out to prevent the person who performs a ship inspection from being biased in favor of his employer and conducting a "tainted" inspection. A conflict of interest will exist when the inspector also works for an organization which is selling the shipowner radio equipment.⁸ If the combined

⁸ The owner who obtained the GMDSS Safety Certificate and exemption from the radio telegraph requirement described in *Paragraph number 2 of this Comment* finally submitted the vendor's warranty to satisfy the maintenance requirement of §80-1105. The Certificate should not have been issued.

"salesman/installer/inspector" has not installed the equipment correctly then he certainly would be unable to detect a problem during his "inspection" phase. All inspectors must satisfy the Coast Guard or the Commission that they are completely independent of any vendor. ARA is not aware of any other Administration in the world which has given up oversight of ship GMDSS radio inspections.

8. The proposed Regulations do not provide procedures for the reporting of infringements of the Convention or Radio Regulations as required in Article 21, RR 1915-1917. A thorough and complete review of SOLAS and the Radio Regulations should be conducted by the Commission and the Coast Guard before privatized ship radio inspections are considered or implemented.

CONCLUSION


For the above reasons the Commission's proposals do not meet the requirements of the Radio Regulations or the Convention. Of utmost importance is that the proposals, if left to stand, are not in the public interest and severely derogate safety. Notwithstanding the Commission's desire to reduce its administrative involvement in this area, the issues addressed by ARA are of critical importance to all seafarers if radio inspections are to be privatized. It is suggested that the Coast Guard should undertake oversight responsibility in order to insure proper and competent ship radio inspections as part of their overall vessel inspection process. This solution would address concerns of conflict of interest, proper training and competency of inspectors. The funding necessary to accomplish this task could be subsidized by the owners requesting the inspections. The ultimate goal must be to ensure that ship radio installations are properly inspected in keeping with the treaty obligations of the U.S. to meet internationally established safety standards.

If privatization of the FCC inspection process is to be reliable and conform to IMO standards the Commission must establish a regulatory scheme to address (1) conflict of interest, (2) proper certification of organizations providing inspectors and (3) training and testing procedures.

The Commission is concerned that reliance on private sector inspection should not derogate safety of life at sea. This concern is well founded.

June 22, 1996

AMERICAN RADIO ASSOCIATION


Richard L. Bragg
Technical Director

Fair Warning

Airlines Rush to Install 'Breakthrough' System To Prevent Crashes

Using Detailed Maps, It Gives
Pilots up to 60 Seconds
To Avoid Perilous Terrain

Bird's Eye View for 320 Miles

By WILLIAM M. CARLEY

Staff Reporter of THE WALL STREET JOURNAL

As an American Airlines jet headed toward an Andes mountain ridge near Cali, Colombia, one night in December, the plane's ground-proximity warning system gave the pilots a chilling 11-second alert: "Terrain, terrain, pull up." The captain urged the co-pilot, who was at the controls, "Pull up baby, up baby . . . more, more, up, up, up!"

The plane climbed, but in 11 seconds couldn't gain enough altitude. It smashed into the ridge, killing 160 on board. Four survived.

The story of Flight 965, however, isn't over. Now, safety experts believe they have fashioned a way to avert this type of accident and provide a major advance in airline safety.

Mapping the Mountains

Dramatic evidence of the progress is to be found in a small manufacturing plant on the outskirts of Seattle. Engineers have been using data from one of the American jet's "black boxes" to replay the Cali accident on a computer. Only this time, the scenario includes a new warning system, based on an entirely different technology. The new system provides a pilot with a map of the mountains on a cockpit screen — including dangerous peaks and ridges marked in bright yellow and red — and as much as a 60-second voice warning before a possible crash. For pilots, that is an enormous increase in the margin of safety.

In the accident replay, a tiny airplane on the computer screen flies into the valley approaching Cali, with ominous red and yellow dots on the left of the screen showing the Andes mountains to the pilot. Just as the American jet mistakenly did, the "plane" turns left toward the mountains, then right in an attempt to escape danger. But on the screen the pilot can now see the jet is heading directly toward the yellow and red dots of the ridge. Warning the pilot a full 57 seconds before the crash, the dots on the screen flash to a bright solid yellow, and the automatic voice calls, "Caution, terrain." The plane continues, and 5 seconds before hitting the ridge the warning voice commands,

Placing Orders

Mr. Bateman isn't alone in his assessment. Numerous pilots and safety experts who have reviewed the crash say the new warning system would have saved the jet. What's more, they say the new system likely would have saved the jet that carried Commerce Secretary Ron Brown and 34 others to their deaths on a Croatian hillside April 3.

Major carriers around the world are moving rapidly to install the new system. It should, they say, increase safety by helping jets both steer clear of mountains and avoid coming in short of the runway in darkness or bad weather.

"It's going to save airplanes full of people, and for that reason we're committed to installing the new system as soon as practicable," says David Fleming, British Airways' chief pilot for technical matters.

"This is a breakthrough that's going to save countless lives," says Hart Langer, United Airlines' senior vice president for flight operations. United plans to install the new system into 20 of its Airbus Industrie A320 jets by July and the rest of its 558-plane fleet subsequently.

Seeking FAA Approval

Even Boeing Co., known for its caution in adding new devices to airplanes, is anxious to go ahead. "We're going to get this into our production aircraft and urge our customers to retrofit their existing fleets as soon as possible," says William Bresley, a Boeing engineer.

The enhanced ground-proximity warning system, or GPWS as it is called, is so new that it hasn't been cleared by the Federal Aviation Administration. But approval by the agency, as well as European authorities, is expected this summer.

There are some crashes the new system wouldn't prevent, including last month's ValuJet accident near Miami, which apparently started because of an onboard fire. As engineers have figured out how to avoid many causes of accidents, such as windshear, the crashes caused by "controlled flight into terrain" have become a leading killer. These accidents, in which a plane under control is inadvertently flown into the ground, ranked No. 1 in the past five years with 17 fatal crashes around the world, a Boeing analysis shows.

The early ground-proximity warning systems, first installed in U.S. planes in the mid-1970s, got off to a bad start. Use of the systems was spurred in 1974, when a Trans World Airlines jet approaching Dulles International Airport near Washington crashed into a hill, killing 52. Under intense congressional pressure, the FAA

Please Turn to Page A12, Column 1

Continued From First Page

mandated the GPWS for all U.S. airlines. Several foreign airlines followed.

The early systems, experts now agree, were rushed into airplanes too quickly. They employ a radio altimeter, similar to radar bouncing radio waves off the ground beneath a plane, to determine altitude. Mathematical algorithms, calculating how fast the ground is rising as a plane flies along, signal about 10 to 15 seconds in advance when there seems to be a mountain ahead.

'The Screamer'

Those early systems also gave numerous false alarms. They also gave nuisance alarms when a pilot was approaching a runway and had to fly close to the ground to land anyway. Because the systems were crying wolf too often — it was nicknamed "the screamer" — some pilots ignored the warnings. Some captains would even pull the circuit breaker for the warning system so they wouldn't have to listen to it.

One result was a series of accidents. In 1983, a Colombian Avianca jet approaching the airport at Madrid was coming in short of the runway. The GPWS gave a valid alarm, the automatic voice warning: "Pull up, pull up." The pilot, ignoring the warning, told his co-pilot: "It's OK, it's OK." Seconds later, the 747 hit the ground, killing 183.

In recent years AlliedSignal, the only producer of GPWS units, has improved the algorithms and tailored the units to individual airports, sharply reducing false and nuisance warnings. And the older systems have saved lives: Such accidents declined sharply in the U.S., and to a lesser extent overseas. But these conventional systems still don't provide much more than 10 to 15 seconds of warning.

Two corporate-jet accidents played a key role in the next step. In 1990, a Gulfstream corporate jet operated by Eastman Kodak Co. crashed short of the runway in Little Rock, Ark., killing several officials of Kodak's Eastman Chemicals unit and two pilots. The next year another Gulfstream jet, this one operated by DuPont Co., was misdirected by a Malaysian air controller during an approach to the island of Borneo. The Gulfstream smashed into a mountain, killing five executives of DuPont's Conoco oil unit, four of their wives and three crew members.

Neither jet had a GPWS. After the crashes, Gulfstream Aviation Inc., maker of the corporate jets, got interested in warning systems. And Gulfstream wanted something better than the conventional GPWS. Ted Mendenhall, director of flight operations for Gulfstream, says, "We wanted the best technology which would provide the greatest possible safety."

Mapping the World

At about the same time, the Cold War came to an end, and the Pentagon and foreign governments began releasing maps of the world. The maps had been finely detailed to guide cruise missiles through mountain ranges or aid warplanes making low-level bombing runs. But the same detail could be used to keep civilian planes away from peaks and ridges.

AlliedSignal engineers began feeding into computers massive amounts of newly available map data, including information about man-made structures near airports. Now, once a jet determines its location with the help of ground navigation aids or satellites, AlliedSignal's new system can pull up the proper map. The system displays the airplane on the cockpit screen in relation to local terrain. Taking the plane's position, altitude, speed and course into account, the computer screen paints mountains at or above the plane's height in yellow and red dots. When the system senses an approach to dangerous terrain, the dots switch to solid bright yellow, and the oral warnings begin.

AlliedSignal installed a prototype of its new system in a small plane and began barnstorming the U.S. to demonstrate it, deliberately flying (during daytime in clear weather) toward mountains. Gulfstream Aviation officials flew in the demonstration plane, and then placed the crucial first order for the new system. The sticker price for the system is \$56,000.

Others are interested in acquiring the new system. United Airlines, a unit of UAL Corp., and British Airways are committed,

and Japan Airlines and Lufthansa are studying it. Robert Baker, executive vice president for operations at American Airlines, a unit of AMR Corp., says "we're committed" to buying it, with approval from the airline's directors expected in July. American first plans to fit a 757 with the new system and test-fly South American routes with it, then install the new units in its 634-plane fleet. Each new system will include a conventional GPWS as a backup.

Mesmerizing Display

The new GPWS could have its own problems. The cockpit display of mountains is so vivid that some worry pilots might be mesmerized by it, neglecting their basic navigation instruments. "This isn't for navigation, we aren't making bombing runs," says James McRoberts, Boeing's chief test pilot.

Another limitation: Some nations, such as North and South Korea, Indonesia and Malaysia won't release detailed maps of their terrain, and for some parts of South America such maps don't exist. AlliedSignal officials say they have been able to obtain maps from other sources, some less detailed but still adequate for airlines.

Still, pilots say the new system should prove invaluable, and not only because of its 60-second oral warning. "What a pilot doesn't want to do . . . is lose 'situational awareness,' " an alertness as to where the plane is in relation to dangerous terrain, explains Mr. Langer, chief of United Airlines' flight operations. The cockpit display of the new GPWS can be set for a range as much as 320 miles, or as little as 10 miles to provide better detail near an airport. The display thus provides an unfolding panorama of the terrain, even in bad weather, as the plane flies along. "You're never in doubt about your position," Mr. Langer says.

This provides an enormous advantage: If there is any navigation error or misdirection by controllers, and a pilot winds up heading for the hills, there is time to consult charts, talk to the co-pilot and radio the air controller. "The pilot is spring-loaded to ask the controller the right question and get the right clearance," says Edward Thomas, a United Airlines pilot.

Another advantage: If there is a navigation problem that isn't solved and pilots become lost, the new GPWS will still display dangerous mountains ahead.

Cockpit Confusion

Just how valuable the new system could be is demonstrated by the recording of Capt. Nicholas Tafuri and co-pilot Don Williams of American Flight 965. As the jet headed down the narrow valley toward Cali, the captain mistakenly punched into the plane's navigation computer a radio beacon for Bogota, causing the autopilot to suddenly turn the plane left toward the Colombian capital, investigators believe.

The cockpit scene was one of utter confusion.

Co-pilot Williams: "Where are we . . . where we headed?"

"I don't know," Capt. Tafuri replied. "What the, what happened here? . . . Just doesn't look right on mine [instruments]. I don't know why."

Co-pilot Williams, at the controls: The plane is making a "left turn, so you want a left turn back around" to make a new approach?

Capt. Tafuri: "Nawww . . . hell no, let's press on to . . ."

Co-pilot Williams: "Well we're . . . press on to where though?"

While the pilots debated, the Boeing 757 kept turning left and descending toward the mountain range. At this point, apparently suspecting the jet was heading into danger, the captain ordered a turn back toward the valley.

"Come to the right, right now, come to the right, right now," he told Mr. Williams.

The co-pilot turned right. The jet, however, was now descending toward the mountain ridge. Though hidden in the darkness, the ridge would have shown up on the new GPWS display and triggered the nearly 60-second warning, almost surely saving the plane. But the jet's 11-second alarm, and the captain's exhortation to the co-pilot, "Pull up baby," proved to be too little, too late.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE DATA
AND INFORMATION SERVICE
Washington, D.C. 20233

March 29, 1996

E/SP3:RRV

Ms. Beverly Baker, Chief
Compliance and Information Bureau
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Subject: Interference Emissions in the 406-406.1 MHz Band

Reference: Resolution No. 205 of WARC-MOB-87

Dear Ms. Baker:

Recent evidence indicates that the life-saving instruments on NOAA satellites are receiving intolerable interference 41% of the time as they orbit the earth (Attachment 1). In this regard, I have formed an interagency committee to help locate the various sources of interference and to take appropriate action to stop the proliferation of interference within the 406-406.1 MHz band.

There are three things you can do to help this committee accomplish their objectives. First, assure that my monthly interference reports are being forwarded to ITU. Second, provide feedback on a regular basis from the ITU that indicates the action they have taken to stop known sources of interference. Third, appoint someone from your office to attend the monthly meetings of the interagency committee.

On October 17, 1995, I talked to Mr. Natarajan of the ITU. He stated that he had not received an interference report from the United States since August 1994. I was shocked to hear this, since I send your office monthly interference reports so you can in turn forward these reports to the ITU.

In addition, I sent your office a special report, November 3, 1995, on a significant interference source located in Brazil. In this report, I had asked that the Brazilian recipient contact us directly. To date, I have not received a response from your office, the ITU or the Brazilian authorities.

On March 15, 1996, I sent a representative from our committee to Geneva to meet with Mr. Natarajan. He reported that Mr. Natarajan is presently receiving reports from the United States and that feedback on the action taken is being provided to your Columbia, Maryland office. Unfortunately, however, I have not received any feedback from your office since August 30, 1994.

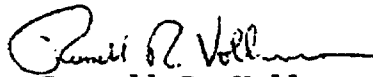


FNMI NSHDE/41

This matter requires your immediate attention. Signals from emergency distress beacons cannot be received during periods of interference. Therefore, the thousands of people, who have purchased these beacons to save their lives in the event of an emergency, are in jeopardy.

I suggest that we meet as soon as possible to discuss how we can stop the unauthorized use of the 406.0 to 406.1 MHz band. Please call me at 301-457-5678 to set up a convenient time and place to meet.

Sincerely,



Russell R. Vollmers, Deputy
SARSAT Operations Division

Enclosure

cc: Dave Affens - NASA
 Jim Bailey - NOAA
 Bill Burkhardt - NOAA
 Dick Barth - NOAA
 Blair Boyd - SSAI
 Fred Flatow - CSC
 Mort Freedman - NASA
 Ron Grandmaison - USCG
 [REDACTED] - USCG
 John Hudak - FCC
 Jim King - INMARSAT
 Fred Kissel - KE
 Jeff Khorrami - TSI
 William Luther - FCC
 Dave McGinnis - NOAA
 Ajay Mehta - SSAI
 Gary Patrick - NTIA
 Rich Renner - CAL
 Bart Sessions - CSC
 Ron Wallace - NASA

RECORD OF EQUIPMENT OF RADIO FACILITIES FOR COMPLIANCE WITH THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED IN 1988

1. Particulars of ship

Name of Ship ENERGY ENTERPRISE Call sign WBJF
 Official Number 657540 Port of Registry
 Minimum number of persons with required
 qualifications to operate the radio installations at least one

2. Details of radio facilities

Item	Actual Provision
1 Primary Systems	
1.1 VHF radio installation	Provided
1.1.1 DSC encoder	Provided
1.1.2 DSC watch receiver	Provided
1.1.3 Radiotelephony	Provided
1.2 MF radio installation	
1.2.1 DSC encoder	Provided
1.2.2 DSC watch receiver	Provided
1.2.3 Radiotelephony	Provided
1.3 MF/HF radio installation	
1.3.1 DSC encoder	Provided
1.3.2 DSC watch receiver	Provided
1.3.3 Radiotelephone	Provided
1.3.4 Direct printing radiotelegraphy	Provided
1.4 INMARSAT ship earth station	Provided
2 Secondary means of alerting	Provided
3 Facilities for reception of maritime safety information	
3.1 NAVTEX receiver	Provided
3.2 EGC receiver	Provided
3.3 HF direct printing radiotelegraph receiver	Provided
4 Satellite EPIRB	
4.1 COSPAS-SARSAT	Provided
4.2 INMARSAT	Provided
5 VHF EPIRB	Not Provided
6 Ship's radar transponder	Provided
7 Radiotelephone distress frequency watch receiver on 2182 kHz	Provided
8 Device for generating the radiotelephone alarm signal on 2182 kHz	Provided

ENERGY ENTERPRISE

3. *Methods used to ensure availability of radio facilities (regulations IV/15.6 and 15.7)
(at least one required for sea areas A1 and A2, at least two for A3 and A4)*

Item	Actual Provision
3.1 Duplication of equipment	Provided
3.2 Shore-based maintenance	Not Provided
3.3 At-sea maintenance capability	Not Provided

4. *Ships constructed before 1 February 1995 which do not comply with all the applicable requirements of Chapter IV of the convention as amended in 1988*

- 4.1 For ships required to be fitted with radiotelegraphy in accordance with the Convention in force prior to 1 February 1992.

Item	Requirement of regulations	Actual provision
Hours of listening by operator	At least 8 hours per day	Provided
Number of operators	At least one	Provided
Whether auto alarm fitted	Required	Provided
Whether main installation fitted	Required	Provided
Whether reserve installation fitted	Required	Provided
Whether main and reserve transmitters electrically separated or combined	Separated	Separated

- 4.2 For ships required to be fitted with radiotelephone in accordance with the Convention in force prior to 1 February 1992.

Item	Requirements of regulations	Actual provision
Hours of listening	—	—
Number of operators	—	—

THIS IS TO CERTIFY that this record is correct in all respects

Issued at Baltimore, Maryland
(Place of issue of the Record)

February 1, 1996
(Date of issue)

Donald W. Bogert
(Signature of inspecting officer)

Columbia Operations Center
(Issuing office location)

Appendix A

TO: ARA
ATTN: Richard Bragg

Comments on FCC 96-194 (NPRM)

With the numerous governmental budget cuts it is understandable that the FCC would like to reduce its work load by relinquishing the inspection of merchant vessels to the private sector. However, similar shifting of FCC responsibilities such as FCC radio examinations have had mixed results. It is unrealistic to assume that businesses that make a living by providing a service will enforce strict federal guidelines which would reduce their own profits.

The procurement of the sophisticated test equipment necessary to certify compliance of installed equipments is an expensive undertaking. Most likely only those already in the business of maritime electronics would venture such an undertaking. Thus we would have a scenario where the installer and maintainer would most likely be the "inspector". Isn't this just putting a little too much trust in human nature? With the installation of the GMDSS and the elimination of onboard Radio Officers the system is dependent on precise reliability of the equipment as the GMDSS operator is minimally trained and has no maintenance responsibilities. Do we now trust the certification of these equipments to those who have a pecuniary interest in the vessel/company?

Perhaps it is about time that the inspection of a vessels electronics be put where it belongs. That is, with the U.S. Coast Guard which is already charged with inspection of the rest of the vessel. In fact, the United States is probably the only country in which two entities (the USCG and the FCC) were charged with vessel inspections. The Coast Guard has always accepted the FCC inspections and certificates as prima facie evidence of compliance. As the USCG already has inspections procedures in place it would simply be a matter of increasing their inspection force by the addition of electronic technicians which are already familiar with shipboard electronics and would only have to educate themselves as to the carriage requirements of merchant vessels. This would at least ensure that a truly independent agency is involved in vessel inspections.

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EXHIBIT E